

Product Information

TROGAMID® CX7323

MICROCRYSTALLINE, PERMANENTLY TRANSPARENT
POLYAMIDE

TROGAMID® CX7323 is a microcrystalline transparent polyamide for the manufacture of parts according to the injection molding procedure.

The crystallites are so small, that they do not scatter visible light, and the material appears transparent to the human eye. The crystalline structure causes the excellent crack resistance for this polymer.

TROGAMID® CX7323 is supplied as spherical pellets in polyethylene packaging.

Deviations of molds or in processing are possible to a certain extent, if they are required by the cavity or the process itself.

Pigmentation may affect values.

For information about processing of TROGAMID®, please follow the general commendations about "[Processing of TROGAMID® compounds](#)".

FOR FURTHER INFORMATION PLEASE CONTACT US AT EVONIK-HP@EVONIK.COM
OR VISIT OUR PRODUCT AT WWW.TROGAMID.COM

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile Modulus	1400 / -	MPa	ISO 527
Tensile Strength	60 / -	MPa	ISO 527
Yield stress	60 / -	MPa	ISO 527
Yield strain	8 / -	%	ISO 527
Stress at 50% strain	40 / -	MPa	ISO 527
Stress at break	60 / -	MPa	ISO 527
Nominal strain at break, εB	160 / -	%	ISO 527
Tensile creep modulus, 0,5% Strain, 1h	* / 1300	MPa	ISO 899-1
Tensile creep modulus, 0,5% Strain, 1000h	* / 700	MPa	ISO 899-1
Charpy impact strength, +23°C	N / -	kJ/m ²	ISO 179/1eU
Charpy impact strength, 0°C	N / -	kJ/m ²	ISO 179/1eU

Charpy impact strength, -30°C	N / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	11 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, 0°C	12 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	11 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Flexural modulus, 23°C	1700 / -	MPa	ISO 178
Flexural stress at conv. deflection, 23°C	50 / -	MPa	ISO 178
Flexural strain at flexural strength, 23°C	9 / -	%	ISO 178
Flexural strain at break, 23°C	N / -	%	ISO 178
Pressure cycle test on hollow part	200000 / *	cycles	EN 13443-1

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	250 / *	°C	ISO 11357-1/-3
Glass transition temperature	140 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	108 / *	°C	ISO 75-1/-2
Temp. of deflection under load B, 0.45 MPa	122 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	137 / *	°C	ISO 306
Vicat softening temperature B, 50 N, 50 K/h	130 / *	°C	ISO 306
Coeff. of linear therm. expansion, 23°C to 55 °C, parallel	90 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, 23°C to 55 °C, normal	90 / *	E-6/K	ISO 11359-1/-2
Melting Temperature	250	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Water absorption	3.5 / *	%	Sim. to ISO 62
Humidity absorption	1.5 / *	%	Sim. to ISO 62
Density	1020 / -	kg/m ³	ISO 1183

Shore D hardness	81 ^[b] / -	-	ISO 7619-1
Ball indentation hardness	110 / -	MPa	ISO 2039-1
Density	1020	kg/m ³	ASTM D 792

b: 3 seconds

Burning Behav.	dry / cond	Unit	Test Standard
Burnin behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	3.0 / *	mm	-
YellowCard available	yes / *	-	-
Burning behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	mm	-
Yellow Card available	yes / *	-	-
Burning behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Yellow Card available	yes / *	-	-
Burnin behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.4 / *	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested (1)	1	mm	-
Glow Wire Ignition Temperature (GWIT)	800	°C	IEC 60695-2-13
GWIT - thickness tested (1)	1	mm	-

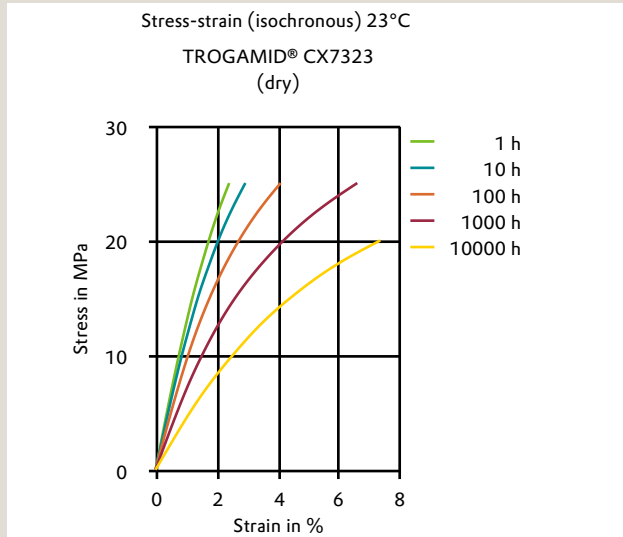
Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 100Hz	3.6 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.2 / -	-	IEC 62631-2-1
Dissipation factor, 100Hz	115 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	325 / -	E-4	IEC 62631-2-1
Volume resistivity, pV	>1E13 / -	Ohm*m	IEC 62631-3-1

Surface resistivity, σE	* / 1E13	Ohm	IEC 62631-3-2
Surface resistance, RSA	1E13 / -	Ohm	IEC 62631-3-2
Surface resistivity, σA	1E14 / -	Ohm per square	IEC 62631-3-2
Electric strength, AC, S20/S20	27 / -	kV/mm	IEC 60243-1
CTI, test solution A, 50 drops value	600 / -	-	IEC 60112

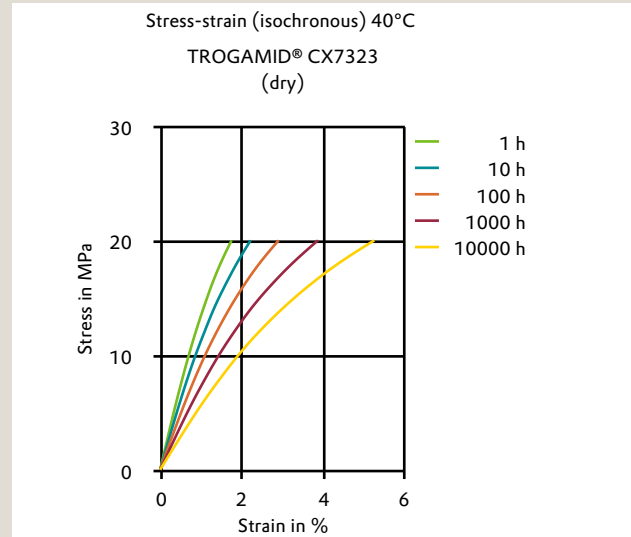
Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	8.2 / *	cm ³ /10min	ISO 1133
Temperature	280 / *	°C	-
Load	2.16 / *	kg	-
Molding shrinkage, parallel	0.7 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.8 / *	%	ISO 294-4, 2577
Mold temperature	80 / *	°C	-
Melt temperature	280 / *	°C	-

Diagrams

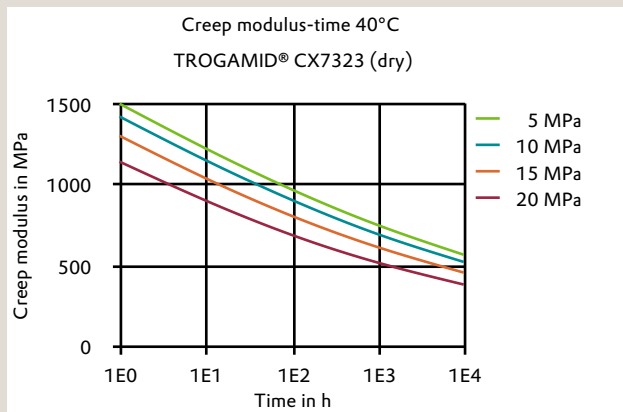
Stress-strain (isochronous) 23°C



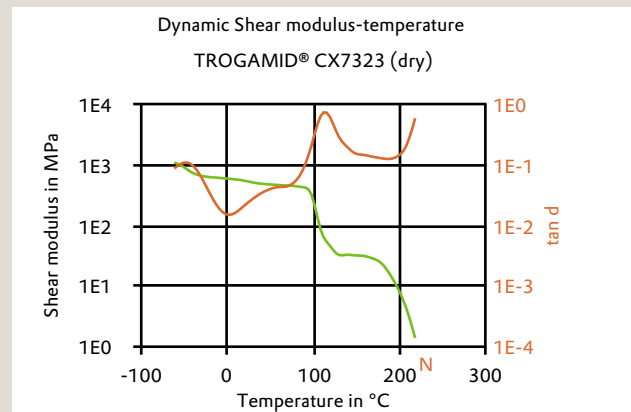
Stress-strain (isochronous) 40°C



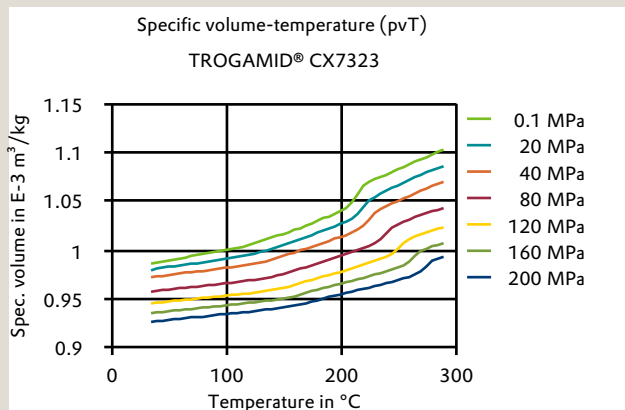
Creep modulus-time 40°C



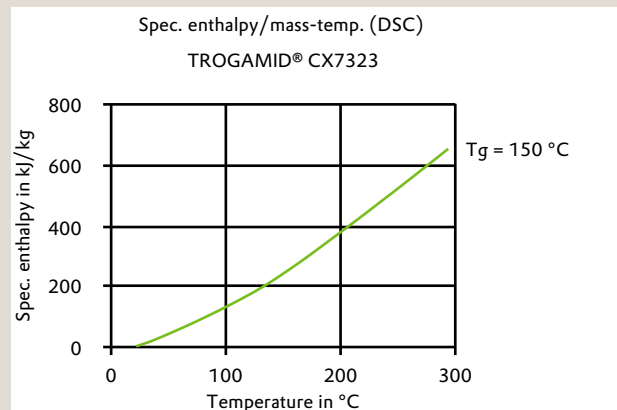
Dynamic Shear modulus-temperature



Specific volume-temperature (pvT)



Spec. enthalpy/mass-temp. (DSC)



Characteristics

Key Feature, Industrial Sector

Automotive, Aircraft and Aerospace, Electrical and Electronical, Industry and Building Construction, Optics, Sports and Lifestyle

Key Feature, Processing

Injection Molding, Extrusion

Key Feature, Optics

Transparent, High Gloss

Key Feature, Resistance to

Heat (Thermal Stability), Hydrolysis / Hot water, U.V. / Light / Weathering, Wear / Abrasion, Fatigue Resistance, Oil / Fuels

Key Feature, Electrical

Isolating

Key Feature, Certificate / Licence

Food contact, Drinking water contact, Automotive

Key Feature, Additives

Unfilled

Applications

Encapsulation, General Purpose, (Sun-) glasses, Hygiene and cosmetics

Processing

Film Extrusion, Profile Extrusion, Sheet Extrusion

Special Characteristics

Environmental Stress Crack Resistance, Light-stabilized, U.V. stabilized, Medium viscosity

Ecological valuation

Water contact KTW, Water contact DVGW W270, US Pharmacopeia Class VI Biocompatibility

Delivery form

Spherical Pellets

Chemical Media Resistance

Acids

✘ Sulfuric Acid (38% by mass) (23°C)

Alcohols

✔ Isopropyl alcohol (23°C)

✔ Methanol (23°C)

✓ Ethanol (23°C)

Hydrocarbons

✓ Toluene (23°C)

Ketones

✓ Acetone (23°C)

Mineral oils

✓ SAE 10W40 multigrade motor oil (23°C)

Standard Fuels

✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)

✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)

✓ Diesel fuel (pref. ISO 1817 Liquid F) (23°C)

Other

✓ Ethyl Acetate (23°C)

Rheological calculation properties	dry	Unit	Test Standard
Density of melt	900	kg/m ³	-
Thermal conductivity of melt	0.25	W/(m K)	-
Spec. heat capacity of melt	2490	J/(kg K)	-
Eff. thermal diffusivity	1.12E-7	m ² /s	-
Ejection temperature	100	°C	-

This information and all technical and other advice are based on Evonik's present knowledge and experience. However, Evonik assumes no liability for such information or advice, including the extent to which such information or advice may relate to third party intellectual property rights. Evonik reserves the right to make any changes to information or advice at any time, without prior or subsequent notice. Evonik disclaims all representations and warranties, whether express or implied, and shall have no liability for, merchantability of the product or its fitness for a particular purpose (even if Evonik is aware of such purpose), or otherwise. EVONIK SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. It is the customer's sole responsibility to arrange for inspection and testing of all products by qualified experts. Reference to trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used.

® is a registered trademark of Evonik Industries AG or one of its subsidiaries

Evonik Operations GmbH
Smart Materials
High Performance Polymers
45772 Marl / Germany
Tel: +49 2365 49-9878
evonik-hp@evonik.com
www.plastics-database.com